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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,642	06/20/2001	Darrell W. Kelsoe		4543

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[REDACTED] EXAMINER

CAMERON, ERMA C

ART UNIT	PAPER NUMBER
1762	16

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/885,642	KELSOE, DARRELL W.
	Examiner	Art Unit
	Erma C. Cameron	1762

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 72-108 and 110-118 is/are pending in the application.
- 4a) Of the above claim(s) 79,102 and 103 is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 72-78, 80-101, 104-108, 110-118 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's arguments filed 4/25/2003 have been fully considered but they are not persuasive.

Election/Restrictions

2. Claims 79 and 102-103 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 15, filed 4/25/2003.

The applicant has confirmed the election of tetravalent atoms with alkoxy functional groups and prior addition of an acid catalyst.

The applicant had also elected R₃XaXb as the solute compound. This was not confirmed.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:
 - a) The Brief Description of the Drawings does not agree with the drawings themselves.
The Description contains Figures 6a, 6b and 6c, whereas the drawings are labeled 6, 6a and 6b.

- b) The specification discusses Figures 6a, 6b and 6c, but not Figure 6.

This was not addressed in the 4/25/2003 response,

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The objection to Claims 72-78, 80-101 and 104-118 is withdrawn because of the 4/25/2003 amendment.

Note that item #19, the amendment to page 24, line 22 to page 25, line 1 has not been entered because it does not constitute a complete paragraph.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 72-78, 80-101 and 104-118 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to

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reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

a) Page 12, line 18 and page 13, line 13: it is not clear what is meant by ...absorbing sodium silicate... or ...WPTC may introduce Borax and Sodium Silicate into the wood....

Sodium silicate is not mentioned elsewhere in the specification as being one of the chemicals used in the treatment.

b) 24:18-22 – these formulas are correct only for a tetravalent Xa. They would not be correct for tri or pentavalent Xa.

These items were not addressed in the 4/25/2003 amendment.

7. Claims 72-78, 80-101 and 104-118 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 72, 106, 111: hydrophilic organic solvent appears to be new matter. The examiner cannot find where in the specification as originally filed the organic solvents are termed “hydrophilic”.

Regarding applicant's arguments in the 4/25/2003 amendment, while at least some of the solvents used are hydrophilic, the specification as originally filed did not disclose that any or all hydrophilic organic solvents were operational in the claimed invention.

8. Claims 74, 75, 78 and 117 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The examiner cannot find where in the original specification the reaction of the functional group with the wood is described as exothermic or as self-initiating.

Therefore these terms appear to be new matter.

These terms had not been used in the original specification, and the applicant has not supplied sufficient evidence to allow their use.

9. Claims 73, 76 and 92 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The examiner cannot find where in the specification as originally filed there is a description of the solute being monomeric before application to the wood. In fact, Figures 7-10 show the solute polymerizing before reacting with the wood.

This appears to be new matter.

The applicant has not shown sufficient evidence to support the use of the term monomers to describe the solute.

10. Claims 82-84, 86-88 and 111-118 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification as originally filed does not describe a pro-catalyst and non-pro-catalyst. These terms appear to be new matter.

The rewrite of claims containing these terms, as proposed by the applicant in the 4/25/2003 amendment (pages 20-23) would overcome this rejection.

11. The rejection of Claims 100-101 under 35 U.S.C. 112, first paragraph, is overcome by the 4/25/2003 amendment.

12. Claim 104 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification as originally filed does not disclose that the functional groups are solvated by water.

This appears to be new matter.

The applicant has not shown sufficient evidence why this term should be allowed.

13. Claim 99 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification as originally filed does not disclose cyclic interlocking molecules having as a part of the cyclic structure at least two carbons within the cellulose and at least two of the atoms from the functional groups consisting of trivalent, tetravalent and pentavalent atoms.

This appears to be new matter.

The applicant has not shown sufficient evidence that this description should be allowed.

14. Claims 111-117 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treating wood with a solute of tetravalent atoms with an alkoxy functional group and an acid catalyst, does not reasonably provide enablement for any “pro-catalyst reactant” and any “non-pro-catalyst reactant”. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

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The description of the reactants as "pro-catalyst" and "non-pro-catalyst" is broader than the specification. In addition, these terms were not in the specification as originally filed, nor has the applicant shown justification for their use.

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 72-78, 80-101 and 104-108 and 110-118 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) There is no antecedent basis for :

Claim 89 the non-catalytic reagents

Claim 99 the functional groups consisting of trivalent, tetravalent and pentavalent atoms

Claim 100 the treatment

b) Claim 73 is dependent on claim 76.

c) Claim 72 and 106: it is not clear what the solute or functional group reacts with.

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d) Claim 83 and 84 and 91: it is not clear if the % is based on weight or other measurement.

e) Claim 89: the use of the term would is vague in that it is not clear what is included.

f) Claim 97: the chemical structures are for tetravalent atoms only, and not for tri- or pentavalent. In addition, the solute elected by applicant is $R_3X_aX_b$, not $RX_aX_b_3$ (marked up version). See k) below. It is now unclear from the differences between the clean and marked up versions which solutes are being claimed

g) Claim 115: "acid" should come after hydrochloric.

h) Claim 72: the closed language of Claim 72, consisting essentially of, would preclude the acid or base catalysts of claim 77 and other claims.

i) (new) Claims 113 to 118 in the marked up version have been numbered 84-89.

j) (new) Claim 87: it is not clear how a functional group can be a mixture of molecules.

k) (new) Claim 97: the marked up version and clean version are not the same.

Items a) through h) were not addressed in the 4/25/2003 amendment.

Double Patenting

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 72-77, 80, 92-96, 98 and 104-108 are provisionally rejected under the judicially created doctrine of double patenting over claims 35, 39-40, 42, 44-45, 48, 49-51, 57-60, 62-63 and 65-67 of copending Application No. 09/788165. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: treating wood with a solution of tetravalent or pentavalent compound containing a functional group, and optionally a catalyst.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending

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application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

This was not addressed by the 4/25/2003 amendment.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claims 72-78, 80-96, 98-101 and 104-108 and 111-118 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-318509.

‘509 teaches impregnating wood (which may be humidified (page 13 of translation)) with an alcohol or acetone solution (p13) comprising a metal oxide, trimethoxy silane (p 22) and an acid catalyst (p 14, 16). The silane condenses with itself and/or reacts with the hydroxyl of the wood (p 8). The wood has fire retardant properties (p 8). The property of the silane reacting exothermically with the wood would be inherent to the reaction.

The applicant has argued in the 4/25/2003 amendment that their claimed invention incorporates a soluble boron reagent into the wood (page 30). However, none of the claims have this process as an integral part of the claimed invention. The only claims to boron are as an

additive. The applicant also argues that '509 does not teach exothermic bonding of the tetravalent atoms (page 31). However, the application as filed did not disclose exothermic bonding. The applicant has also argued that '509 does not teach 'strong acids' (page 43). However, the use of 'strong acids' is not in any of the present claims.

21. Claim 110 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-318509 taken in view of 3682675 (Myers) or Ogiso et al (Mokuzai Gakkaishi, 39(3), pp 301-307, 1993).

'509 is applied here for the reasons given above.

'509 fails to teach using ultrasonics.

'675 teaches that ultrasonics helps to promote acceptance of chemical solutions, of substances such as borax, into wood (2:22-34; 3:4-9).

Ogiso teaches using ultrasonics to aid in the penetration of a silane solution into wood (see Abstract, page 302).

It would have been obvious to one of ordinary skill in the art to have incorporated the ultrasonics of '675 or Ogiso into the '509 process because of the teaching that ultrasonics helps promote acceptance into the wood

22. Claim 97 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-318509 taken in view of 5652026 (Saka et al).

'509 is applied here for the reasons given above.

'509 fails to teach that a silane of structure $R_3 Si(OR')$ is used in the solution to treat wood.

‘026 teaches that silanes such as trimethylmethoxysilane (Example 5) or dimethyldimethoxysilane (Example 4) may be used in an acid or base catalyzed solution of acetone or alcohol to treat wood (4:29-5:15)

It would have been obvious to one of ordinary skill in the art to have substituted one of the silanes of ‘026 into the ‘509 treatment process, with the expectation of equivalent results.

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erma C. Cameron whose telephone number is 703-308-2330. The examiner can normally be reached on 8:30-6:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7718 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Erma Cameron
**ERMA CAMERON
PRIMARY EXAMINER**

Erma C. Cameron
Primary Examiner
Art Unit 1762

June 15, 2003